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16th Czech – Slovak Spectroscopic Conference

PROGRAMME

Sunday 27 May

16:00-19:00	REGISTRATION
19:00-24:00	WELCOME PARTY with barbecue

Monday 28 May

8:30-9:00	OPENING CEREMONY (V. Kanický, M. Miglierini)		
Session 1 Atomic spectrometry (AAS, GD-OES)		Chair: Viktor Kanický	
9:00-9:15	CP1	Metrohm	Metrohm Spektroskopie – Budiž světlo
9:15-10:00	PL1	A. D'Ulivo	Chemical vapor generation by aqueous boranes: from analytical applications to mechanistic investigation
10:00-10:30	IL1	Z. Weiss	Advances in glow discharge emission spectroscopy: selective excitation, transition rate diagrams and beyond
10:30-10:45	OL1	J. Kratzer	Trace determination of selenium by hydride generation in-atomizer trapping atomic absorption spectrometry
10:45-11:30	COFFEE BREAK		
Session 2 Atomic spectrometry (Miniature plasma sources)		Chair: Zdeněk Weiss	
11:30-12:00	IL2	J. Franzke	Dielectric barrier discharges - plasma fundamentals and applications in analytical chemistry
12:00-12:15	OL2	A. Hrdlička	Plasma pencil in analytical spectrochemistry - achievements and prospects
12:15-12:30	OL3	M. Dvořáková	Matrix effects in plasma pencil and analysis of real samples
12:30-14:00	LUNCH		
Session 3 Sample preparation/Sample introduction		Chair: Alessandro D'Ulivo	
14:00-14:30	IL3	M. Aghaei	Particle journey through an ICP torch: what modeling reveals?
14:30-14:45	OL4	F. Polák	Aluminium and antimony bioextraction from aluminosilicates and ferric oxohydroxides in presence of filamentous fungus <i>Aspergillus Niger</i>

14:45-15:00	OL5	M. Matulová (SK)	Sorption studies of selenium and iodine from aqueous solutions on natural and synthetic materials
15:00-15:30	CP2	Pragolab	Nexsa - small spot XPS and multi-technique analysis with Raman
15:30-16:15	COFFEE BREAK		
Session 4 Speciation analysis			Chair: Maryam Aghaei
16:15-16:45	IL4	M. Urík	Experimental separation of mobile elements' fraction using extraction with extracellular fungal metabolites
16:45-17:00	OL6	P. Matúš (SK)	Determination of iodine fractions in soils using ICP MS after application of single and sequential extraction techniques
17:00-17:15	OL7	J. Švehla (CZ)	Method development for speciation analysis of volatile mercury forms in ambient air flue gases from incineration plants
17:15-17:30	OL8	M. Šebesta	Influence of zinc initial speciation on its distribution in aqueous media in presence of filamentous fungus or soils
17:30-17:45	OL9	J. Tóth (SK)	Using of immersion probe for kinetic spectrophotometric determination of dissolved chromium species in water samples
17:45-18:15	CP3	Anton Paar	Anton Paar Multiwave 7000 – microwave digestion at its best
18:15-19:15	POSTER SESSION 1		
19:30	Buffet		

Tuesday 29 May

Session 5 Special spectroscopic methods (Mössbauer spectroscopy) <i>Chair:Joachim Franzke</i>			
8:00-8:45	PL2	M. Miglierini	Synchrotron radiation aided Mössbauer spectrometry
8:45-9:00	OL10	D. Holková	Properties of nanocrystalline alloy after irradiation of amorphous precursors
9:00-9:15	OL11	I. Bonková (SK)	Iron in biological tissues
9:15-9:30	OL12	L. Pašteká (SK)	Influence of external treatment on microstructure of selected steels
Session 6 Molecular spectroscopy (Molecular luminescence) <i>Chair: Renato Zenobi</i>			
9:30-10:00	IL5	M. Hof	Lipid driven nanodomains are fluid
10:00-10:15	OL13	J. Valenta	Determination of absolute emission efficiency of up- and down-converted luminescence and some other advanced optical characterization of fluorides doped with various lanthanides
10:15-10:30	OL14	P. Lubal	Time-resolved luminescence spectroscopy as a tool for study of chemical reactions of Eu(III) complexes
10:30-11:15	COFFEE BREAK		
Session 7 Molecular spectroscopy (NMR) <i>Chair: Marcel Miglierini</i>			
11:15-11:45	IL6	R. Fiala	NMR spectroscopy methods for the studies of biomolecular structure and dynamics
11:45-12:15	IL7	V. Sklenář	Disentangling puzzles - atomic resolution studies of protein disorder
12:15-12:30	OL15	H.Štěpánková	Local structure of garnets studied by NMR
12:30-14:00	LUNCH		
14:00-19:00	EXCURSIONS		
19:00-20:00	POSTER SESSION 2		
20:00	Buffet		

Wednesday 30 May

8:30-8:45	To the memory of Assoc. Prof. B. Strauch (B. Vlčková, I. Němec)		
Session 8 Molecular spectroscopy (Raman, SERS, TERS) Chair: Blanka Vlčková			
8:45-9:30	PL3	J. Popp	Clinical Raman spectroscopy - diagnosis before therapy
9:30-10:15	PL4	R. Zenobi	Tip-enhanced Raman spectroscopy - principles and applications
10:15-10:45	CP4	Nicolet CZ	Nicolet CZ company presentation
10:45-11:30	COFFEE BREAK		
Microsymposium Challenges in Raman spectroscopy starts as a paralell session see pages 14 -15 for its programme			
Session 9 LIBS Chair: Norbert Jakubowski			
11:30-12:00	IL8	J. Kaiser	3D chemical imaging through a combination of laser-induced breakdown spectroscopy and computed tomography
12:00-12:15	OL16	P. Pořízka	Dimensionality reduction of multi-variate laser spectroscopy data
12:15-13:45	LUNCH		
Session 10 LA-ICP-MS Chair: Margaretha T. C. de Loos-Vollebregt			
13:45-14:30	PL5	N.Jakubowski	Method development for metal detection at cellular levels
14:30-14:45	OL17	M. Tvrdonová	Simultaneous imaging of proteins and elements in tissues by LA-ICP-MS
14:45-15:00	OL18	E. Pospíšilová	Laser ablation-based methods in the analysis of clay ground layers in painting
15:00-15:15	OL19	V.Dillingerová	Multivariate statistical analysis of archaeological samples and their visualisation
15:15-15:45	CP5	HPST	ICP-MS systems by Agilent Technologies in the Czech Republic and their capabilities
15:45-16:30	COFFEE BREAK		
Session 11 Mass spectrometry Chair: Jan Preisler			
16:30-17:00	IL9	G. Allmaier	From nanoparticle separation/detection by differential mobility analysis to high energy collision induced dissociation MS
17:00-17:15	OL20	T.Černohorský	New approach to matrix modification in ETV ICP-MS

17:15-17:30	OL21	J. Patočka (CZ)	Practical use of carbon nanoparticles as a transport efficiency modifier for ETV-ICP-TOF-MS
19:00-24:00	CONFERENCE DINNER		

Thursday 31 May

Session 12 Plasma spectroscopy (ICP-MS, ICP-OES, ETV)			Chair: Jozef Kaiser
9:30-10:15	PL6	M. de Loos-Vollebregt	Dealing with the matrix and background in analytical atomic spectroscopy
10:15-10:30	OL22	S. Matějková (CZ)	Use of electrothermal evaporation coupled with atomic emission spectroscopy (ETV-ICP-OES) in analysis of small amounts of organic and biological samples
10:30-10:45	OL23	K. Novotný (CZ)	Comparison of different spectral resolution ICP-OES spectrometers for the determination of rare earth elements
10:45-11:30	COFFEE BREAK		
Session 13 Real sample analysis			Chair: Yaroslav Bazel'
11:30-12:00	IL10	J. Čáslavský (CZ)	Mass spectrometry in environmental analysis
12:00-12:15	OL24	P. Roubíček (CZ)	Can dynamic image analyse method replace classical sieve analysis?
12:15-12:30	OL25	A. Krejčová (CZ)	Testing the reliability of the washing process in hair analysis through a contamination study
12:30-13:00	CLOSING CEREMONY (V. Kanický, M. Miglierini)		
13:00	LUNCH		

Microsymposium Challenges in Raman spectroscopy

PROGRAMME

Wednesday 30 May

11:20-11:30	Microsymposium Challenges in Raman Spectroscopy-opening		
Session M1		Chair: Blanka Vlčková	
11:30-12:00	IL-M1	M. Procházka	Rationally designed metal nanostructures for SERS detection of biologically important molecules
12:00-12:30	IL-M2	K. Machalová-Šišková	Raman and surface-enhanced Raman spectroscopic studies of the large cytoplasmic loop of sodium-potassium pump
12.30-13.00	IL-M3	M. Klož	Spectral watermarking approach to femtosecond Raman Spectroscopy
13:00-14:00	LUNCH		
Session M2		Chair: Renato Zenobi	
14:00-14:30	IL-M4	L. Kavan	Raman spectroelectrochemistry of nanocarbons and titania
14:30-15:00	IL-M5	J. Kalbáčová-Vejpravová	Cryomagnetic Raman micro-spectroscopy - beyond phonons
15:00-15:30	IL-M6	M. Kalbáč	In situ Raman spectroelectrochemistry of carbon nanostructures
15:30-16:00	IL-M7	V. Valeš	Enhanced Raman scattering on functionalized graphene substrates
16:00-16:30	COFFEE BREAK		
Session M3		Chair: Jürgen Popp	
16:30-17:00	IL-M8	J. Štěpánek	Raman scattering and physical chemistry of biomolecules
17:00-17:30	IL-M9	P. Mojzeš	Raman microscopy of microalgae: surprising insights and challenges in the unexplored world
17:30-18:00	IL-M10	M. Michl	Intramolecular excitation energy and charge transfer: fluorescence, transient absorption and resonance Raman studies

Thursday 31 May

Session M4			Chair: Marek Procházka
8:45-9:15	IL-M11	I. Němec	Vibrational spectroscopic characterisation of hydrogen-bonded molecular crystal for nonlinear optics
9:15-9:45	IL-M12	I. Matulková	Vibrational spectroscopic studies of salts of 2,4,6-triaminopyrimidinium and phosphoric acid prepared for non-linear optical applications
9:45-10:15	IL-M13	I. Šloufová	Terpyridine-based ligands and their metal complexes: Raman and surface-enhanced Raman study
10:15-10:45	IL-M14	M. Dendisová	Copper nanostructures: Profits and drawbacks for SEVS techniques
10:45-11:30	COFFEE BREAK		
Session M5			Chair: Ivan Němec
11:30-12:00	IL-M15	V. Baumruk	Raman optical activity
12:15-12:30	IL-M16	B. Vlčková	Towards SERS and SERRS on single molecule level

POSTER SECTIONS PROGRAMME

Monday 28 May (18:15-19:15) POSTER SECTION 1

MP 1	M. Holá	Fascination with laser ablation
MP 2	E. Vaníčková	Analysis of metal layers by LA-ICP-MS
MP 3	F. Gregar	In-line aerosol mass monitoring during laser ablation inductively coupled plasma mass spectrometry analysis
MP 4	M. Hložková	Fundamental study of laser beam-minerals interaction and utilization of LA-ICP-MS in geology
MP 5	K. Novotný	Influence of laser wavelength and laser pulse energy on the depth profiling of historical paintings by LIBS
MP 6	A.V. Dik	New approach to design of experiments for LIBS
MP 7	S. Musil	Hydride generation of tellurium for AAS and AFS
MP 8	S. Musil	Photochemical vapor generation of molybdenum with ICP-MS detection
MP 9	J. Smolejová	Electrochemical generation of volatile Te species for AFS detection
MP 10	M. Svoboda	Optimization of atomization conditions for bismuth, lead and tin hydrides for development of hydride atomizers
MP 11	M. Svoboda	Arsenic speciation analysis by hydride generation – cryotrapping – gas chromatography – atomic absorption spectrometry
MP 12	I. Petry-Podgórska	Volatile species generation for speciation analysis of mercury – preliminary studies
MP 13	J. Sysalová	Mercury species contaminations around the abandoned gold mine Libčice due to the use of amalgamation processes in the former gold mining
MP 14	A. Kaňa	Cationic arsenic species in food samples
MP 15	M. Vosmanská	Development of analytical method for total chromium using inductively coupled plasma mass spectrometry
MP 16	T. Matoušek	Influence of addition of organic solvent to ICP-MS plasma on sensitivity and limits of detection for elements forming volatile species and potential internal standard elements
MP 17	M. Loula	Effect of instrumental parameters on nanoparticle peak width in single particle ICP-MS
MP 18	I. Hagarová	Quantification of silver nanoparticles in the presence of Ag(I) species using cloud point extraction followed by ETAAS
MP 19	J. Komárek	Determination of mercury in soil by ETAAS
MP 20	O. Zvěřina	Determination of cadmium and iron in one firing with high-resolution continuum source AAS
MP 21	S. Ružičková	Evaluation of microwave assisted decomposition method for HR CS FAAS determination of total element contents in the waste mobile phones printed circuit boards
MP 22	T. Šídová	Optimization of sample preparation procedure for the determination of metals in synthetic organic pigments using atomic absorption spectrometry method
MP 23	D. Remeteiová	Investigation of the US EPA method 3052 utilization for microwave acid digestion of printed circuit boards

Tuesday 29 May (19:00-20:00) POSTER SECTION 2

TP 1	A. Jenišťová	The effect of silver nanoparticles on the penetration properties of the skin barrier
TP 2	M. Švecová	Silver hydrosols reduced by flavonoids: what is the effect of immobilization procedures on enhanced Raman signal of riboflavin?
TP 3	T. Helešicová	Raman micro-spectroscopic monitoring of components distribution in poorly soluble pharmaceuticals tablets
TP 4	M. Medvedíková	Diffuse large B-cell lymphoma subtypes classification using vibrational spectroscopy
TP 5	L. Bednářová	Chiral plasmonic nanoassemblies
TP 6	L. Bednářová	Spectroscopic study of tetrathiafulvalene derivatives in charge-transfer complexes
TP 7	P. Tábořský	Interaction of intramolecular g-quadruplex DNA structures with selected alkaloids
TP 8	P. Jarošová	Quaternary protoberberine alkaloids selectively stabilize g-quadruplexes
TP 9	J. Kučera	Enhancement of sensitivity in separation techniques with fluorescence detection using deuterated water
TP 10	A. Vacková	Monitoring spectral changes of nucleic acid UV absorption: Application in study of miRNA binding
TP 11	Y. Bazel'	A combination of liquid phase microextraction and UV-VIS spectrophotometric determination of chromium (VI)
TP 12	Y. Bazel'	HPLC-UV analysis of selected estrogens
TP 13	J. Švancarová Laštincová	Determination of phenolic acids in white wine by hplc with fluorescence detector
TP 14	A. García-Figueroa	Drop sensing platforms for detection of bromine under headspace liquid-phase microextraction configuration: a comparison of organic and nanostructured receptors
TP 15	J. Juřica	Determination of lansoprazole and its metabolites in human serum for phenotypization of CYP2C19 and CYP3A4
TP 16	D. Čožíková	Stability studies of rifampicin and gentamicin by using simple HPLC-UV and HPLC-FLD methods
TP 17	J. Kulhánek	GC-MS determination of the residual malondialdehyde in hyaluronic acid grafted by linolenic acid
TP 18	K. Kostolanská	Online solid-phase extraction liquid chromatography-mass spectrometry of hair cortisol using a surrogate analyte
TP 19	O. Romanyuk	Electron affinity of polycrystalline diamond films
TP 20	R. Zakl	Development of new preparation procedures and the usage of plasmonic recyclable nanomaterials for enhanced molecular spectroscopic techniques
TP 21	P. Šimůnková	The development of surface- and tip-enhanced vibrational spectroscopic methodologies for studies of pollen grains